

REMARKS

This is intended as a full and complete response to the Final Office Action dated February 21, 2008, having a shortened statutory period for response set to expire on May 21, 2008. Please reconsider the claims pending in the application for reasons discussed below.

Claims 22-24, 29-34, 36-37, and 39 remain pending in the application and are shown above. Claims 22-24, 29-34, 36-37, and 39 stand rejected by the Examiner. Reconsideration of the rejected claims is requested for reasons presented below.

Claims 22-24, 29-31, and 39 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Onoe et al.*, U.S. Pat. No. 6,270,839, herein *Onoe*, or *Suntola et al.*, U.S. Pat. No. 4,389,973, herein *Suntola*, in view of *Arnold et al.*, U.S. Pat. No. 5,224,202, herein *Arnold* or *Horsky*, U.S. Pat. No. 6,452,338, herein *Horsky*. The Examiner asserts that it would have been obvious to combine *Onoe*, *Suntola*, *Arnold*, and *Horsky* to derive the claimed invention. The Applicant respectfully traverses the rejection.

Onoe discloses a device for sublimating a solid precursor while forming a gas that is used for a CVD process. *Suntola* discloses an ALD deposition chamber which forms a deposition gas by sublimating a solid precursor. Both *Onoe* and *Suntola*, as the Examiner admits, "do not show the heating member contained within the wall of the housing," which surrounds the solid precursor. (Final OA, page 2).

Arnold discloses an apparatus for evaporating a liquid precursor for use in a CVD process. *Horsky* discloses a device for vaporizing an electron beam ion source (e.g., decaborane) while forming an electron beam during an implantation or ionization process. The device uses a hot water circulation system to heat the decaborane.

The Examiner has failed to provide evidence to suggest why the skilled artisan would be motivated to combine either *Onoe* or *Suntola* with either *Arnold* or *Horsky* and arrive at the presently claimed invention. The skilled artisan would not have been motivated nor find the combination of the cited reference. There is no motivation to take the CVD apparatus disclosed by *Onoe* or the ALD apparatus of disclosed by *Suntola*

which both contain solid precursors but have no heating member contained within the wall of the housing in combination with the CVD chamber of *Arnold* for evaporating a liquid precursor or the electron beam or ionization chamber as disclosed by *Horsky*, which both disclose some sort of heating device within walls.

There is no motivation for the skilled artisan utilizing a solid precursor in the CVD apparatus disclosed by *Onoe* or in the ALD apparatus disclosed by *Suntola* to combine the teachings of an electron beam or ionization chamber as taught by *Horsky* or the use of a liquid precursor as taught by *Arnold*.

Therefore, *Onoe*, *Suntola*, *Arnold*, and *Horsky*, alone or in combination, do not teach, show, or suggest an apparatus for vaporizing a solid precursor, comprising an atomic layer deposition (ALD) chamber having a reaction chamber, a housing having an inlet for receiving a carrier gas and an outlet in fluid communication with a sealable interior volume, wherein the outlet is operably coupled to the reaction chamber of the atomic layer deposition (ALD) chamber, at least two surfaces comprising a mesh material contained in the housing having a solid tantalum-containing precursor applied thereto, and a heating member contained within a wall of the housing, wherein at least one of the at least two surfaces is in thermal communication with the wall of the housing, as recited in claim 22, and claims 23-24, 29-31, and 39 dependent thereon.

Withdrawal of the rejection is respectfully requested by the Applicant.

Claims 32-34 and 36-37 stand rejected under 35 U.S.C. § 103(a) being unpatentable over as applied *Onoe* or *Suntola* in view of *Arnold* or *Horsky* to claims 22-24, 29-31, and 39 above, and further in view of *Gartner et al.*, U.S. Pat. No. 4,947,790, herein *Gartner* or *Loan et al.*, U.S. Pat. No. 6,296,711, herein *Loan*. The Examiner asserts that it would have been obvious to combine *Onoe*, *Suntola*, *Arnold*, *Horsky*, *Gartner*, and *Loan* to derive the claimed invention. The Applicant respectfully traverses the rejection.

Onoe, *Suntola*, *Arnold*, and *Horsky* have been discussed and distinguished above. Therefore, the Applicant asserts that claims 22-24, 29-31, and 39 are in condition for allowance. Since the scope of claims 32-34 and 36-37 is narrower than

the claims from which they depend, claims 32-34 and 36-37 are also in condition for allowance.

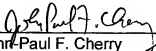
Therefore, *Onoe, Suntola, Arnold, Horsky, Gartner, and Loan* alone or in combination, do not teach, show, or suggest an apparatus for vaporizing a solid precursor, comprising an atomic layer deposition (ALD) chamber having a reaction chamber, a housing having an inlet for receiving a carrier gas and an outlet in fluid communication with a sealable interior volume, wherein the outlet is operably coupled to the reaction chamber of the atomic layer deposition (ALD) chamber, at least two surfaces comprising a mesh material contained in the housing having a solid tantalum-containing precursor applied thereto, and a heating member contained within a wall of the housing, wherein at least one of the at least two surfaces is in thermal communication with the wall of the housing, as recited in claim 22, and claims 32-34 and 36-37 dependent thereon.

Withdrawal of the rejection is respectfully requested by the Applicant.

In conclusion, the references cited by the Examiner, alone or in combination, do not teach, show, or suggest the claimed invention.

Having addressed all issues set out in the Final Office Action, the Applicant respectfully submits that the claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted,



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